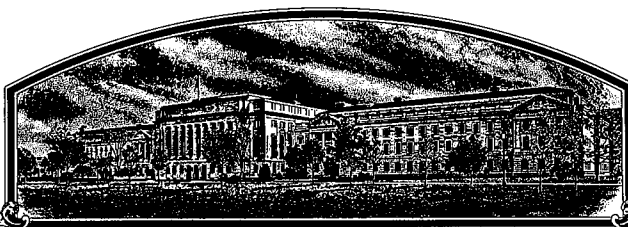


No.

9200038



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

ICI Americas Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (1930, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CORN

'ICI 441'

In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington, D.C.
this 31st day of December in
the year of our Lord one thousand nine
hundred and ninety-two.

Attest:

Kenneth H. Brown
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Howard M. Milgrom
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 242). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) ICI Seeds Inc.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.	3. VARIETY NAME ICI 441
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) P.O. Box 300 Coon Rapids, Iowa 50058		5. PHONE (include area code) (712) 684-2211	FOR OFFICIAL USE ONLY PVPO NUMBER 9200038
6. GENUS AND SPECIES NAME Zea mays L.	7. FAMILY NAME (Botanical) Gramineae		FILING Date December 11, 1991 Time <input type="checkbox"/> A.M. <input type="checkbox"/> P.M.
8. CROP KIND NAME (Common Name) Corn		9. DATE OF DETERMINATION November 1987	FEE Filing and Examination Fee: \$2150.00 Date December 11, 1991 Certificate Fee: \$250.00 Date Nov. 9, 1992
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation		RECEIVED	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Iowa	12. DATE OF INCORPORATION August 15, 1991		
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Dr. Mark J. Messmer ICI Seeds Inc. Research Center P.O. Box 500 Slater, Iowa 50244 PHONE (include area code): (515) 685-3574			

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)			
a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety.			
b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement.			
c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of Variety.			
d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of Variety.			
e. <input checked="" type="checkbox"/> Exhibit E, Statement of the Basis of Applicant's Ownership.			
f. <input checked="" type="checkbox"/> Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____.			
g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States."			
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.) <input type="checkbox"/> YES (If "YES," answer items 16 and 17 below) <input checked="" type="checkbox"/> NO (If "NO," skip to item 18 below)			
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input type="checkbox"/> NO		17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S. <input type="checkbox"/> YES (If "YES," through <input type="checkbox"/> Plant Variety Protection Act <input type="checkbox"/> Patent Act. Give date: _____.) <input checked="" type="checkbox"/> NO			

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES (If "YES," give names of countries and dates) <input checked="" type="checkbox"/> NO First sale of hybrids involving this line occurred January 1991. This line has not been used in seed production outside the U.S.	
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.	

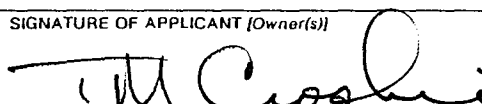
SIGNATURE OF APPLICANT (Owner(s)) 	CAPACITY OR TITLE President	DATE 11-19-91
SIGNATURE OF APPLICANT (Owner(s))	CAPACITY OR TITLE	DATE

EXHIBIT A

ORIGIN AND HISTORY OF GARST CORN INBRED LINE ICI 441

<u>SEASON/YEAR</u>	<u>SELFING GENERATION</u>	<u>NURSERY LOCATION (ROW)</u>	<u>PLANTED PEDIGREE</u>
Summer 1983	-	Maui (Makimoto) (H86-18)	hybrid/inbred cross made
Fall 1983	1	Maui (Makimoto) (2932)	*BEADxP3377
Spring 1984	2	Maui (Makimoto) (31)	BEADxP3377 F2
Summer 1984*	3	Wood River, NE (3998)	BEADx3377 (84S-31-17)
Summer 1985	4	Wood River, NE (1754)	84S-31-0-17-2
Winter 1985-86*	5	Kunia, HA (535)	84S-31-0-17-2-2
Summer 1986	6	Wood River, NE (2072)	84S-31-0-17-2-2-2
Winter 1986-87**	7	Kunia, HA (295)	84S-31-0-17-2-2-2-1
Summer 1987	8	Wood River, NE (DHS 3132-3136)	84S-31-0-17-2-2-2-1 thru 5
Winter 1987-88:		line named ICI 441 and Summer 1987 seed bulked.	

Subsequent generations of ICI 441 have been increased by hand pollination and in isolated fields with isozyme evaluation and visual observation used to maintain uniformity.

* Testcross seed made for yield testing in 1985 and 1986.

** Additional hybrid combinations made involving ICI 441.

* BEAD is an international code for the Holden Foundation Seeds line 'LH132'.

JMS
8/21/92

EXHIBIT A (EXPANDED)

ORIGIN AND BREEDING HISTORY OF VARIETY ICI 441

<u>DATE</u>	<u>BREEDING/SELECTION PROCEDURE</u>
Summer 1983	The original "F1" seed for the population from which ICI 441 was derived was produced by pollinating five plants of Pioneer brand hybrid 3377 with pollen from BEAD (a private line). This seed was produced on Maui, Hawaii. Seed from these five cross pollinated plants was saved and bulked. Resulting seed was called BEADxP3377.
Fall 1983	A sample of the BEADxP3377 seed derived from the summer 1983 Hawaii nursery was planted on Maui, Hawaii in September, 1983. Ten plants were self-pollinated. Seed from these ten plants was saved and bulked.
Spring 1984	A ten row block of seed derived from the fall 1983 bulked selfs was planted in January 1984 on Maui, Hawaii. All plants were self-pollinated. Seed was saved and maintained ear to row from all selfed plants (total ears saved was 44).
Summer 1984	Forty-four ear-rows saved from the spring 1984 Hawaii nursery were planted in a late nursery planting at the Garst Research facility near Wood River, Nebraska. These lines were also placed in a topcross isolation using an inbred tester as a male for the purpose of producing hybrid seed for testing combining ability on per se selected lines during the summer of 1985. The lines were self-pollinated (six plants per row). Per se selection based on standability, uniformity and plant type was performed, and three ears from ear-row number, 17 were selected. Seed was also saved from the topcross row corresponding to ear-row #17 for testing combining ability in 1985.

Summer 1985 Ears #1, #2 and #3 from ear-row 17 selected in 1984 were planted ear-row in the early nursery planting at the Garst Research facility at Wood River, Nebraska. Hybrid seed of ear-row 17 crossed to the inbred tester was planted in two reps at three environments in Nebraska for combining ability estimation. At harvest, selection was practiced among and within ear-rows, and a single ear was selected from ear-row #17-2. This ear was designated as ear 17-2-2. The hybrid ear-row #17 crossed to an inbred tester was also selected from yield trials for promising combining ability.

Winter
1985-86

Ear 17-2-2 was grown ear-row and selfed at the Garst Kunia (Oahu), Hawaii Research Center. Resulting selfed ears were harvested individually, and the three ears designated 17-2-2-1, 17-2-2-2 and 17-2-2-3 were saved for planting ear-row in Summer 1986 for ear-row uniformity assessment. Hybrid seed of 17-2-2 crossed to a tester was also made in an isolated crossing block (inbred tester) in Hawaii to provide seed for continued combining ability estimation/testing during Summer 1986.

Summer 1986

Ear rows using seed from ears 17-2-2-1, 17-2-2-2 and 17-2-2-3 were planted at Wood River, Nebraska for continued self pollination and visual uniformity evaluation. Hybrid seed of 17-2-2 crossed to an inbred tester was planted in two reps at five Nebraska locations. During the season notes were collected on inbred visual uniformity among the five offspring rows derived from 17-2-2. Ear 17-2-2-2 was judged to be continuing to segregate slightly while it's corresponding hybrid continued to exhibit good specific combining ability in yield trials. A single ear from 17-2-2-2 was selected for further selfing in the Winter of 1986-87 nursery. This ear was designated 17-2-2-2-1.

Winter
1986-87

One ear-row of 17-2-2-2-1 was planted at the Garst Kunia (Oahu), Hawaii Research Center. Eight random plants within this row were self pollinated. At harvest, the five best/most uniform ears were saved ear-row for planting and visual assessment for uniformity in the summer of 1987.

Summer 1987 Five ear-rows derived from 17-2-2-2-1 were planted at Wood River, Nebraska for uniformity observation and increase. Traits measured/observed for uniformity were days to 50 percent silking, days to 50 percent pollen shed, anther color, glume color, glume ring color, silk color, leaf margin color. At harvest cob color, grain color and kernel row number were measured. There were no differences among or within ear-rows observed for any of the traits listed. In addition, ten isozyme loci spread throughout the genome were assayed for homozygosity, and no offtypes or segregation was observed. Seed was harvested in bulk from the five rows derived from 17-2-2-2-1.

Winter
1987-88

The inbred described above was named ICI 441.

Since inbred naming, inbred ICI 441 has been measured and shown uniformity and stability for all traits described in Exhibit C ("Objective Description of Variety"). Selfing and ear-row observation is carried out routinely every three-to-four increase generations as a part of the Garst quality assurance process. In addition, isozyme analysis (nine loci) confirms continued genetic purity. Inbred ICI 441 has been increased yearly by the Garst Parent Seed department with careful attention paid to uniformity.

No variant traits have been observed or are expected in inbred ICI 441.

EXHIBIT B

NOVELTY STATEMENT

JMS
8/21/92
with Inbred ICI 441 is most similar to the public inbred line B73. Inbred ICI 441 differs from B73 by anther color, glume ring color, silk color and ear length and diameter. ICI 441 has purplish^{tint} anthers while B73 has yellow anthers. The glume ring color of ICI 441 is red, while B73 is green. Silk color of ICI 441 is red whereas silk color of B73 is yellow. Inbred 441 has a longer, more slender ear than B73. brown

OBJECTIVE DESCRIPTION OF VARIETY
CORN (ZEA MAYS)

NAME OF APPLICANT(S)

ICI Seeds Inc.

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

P.O. Box 300
Coon Rapids, Iowa 50058

FOR OFFICIAL USE ONLY

PVPO NUMBER

9200038

VARIETY NAME OR TEMPORARY
DESIGNATION

ICI 441

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. or) when number is either 99 or less or 9 or less.

1. TYPE:

1 = SWEET

2 = DENT

3 = FLINT

4 = FLOUR

5 = POP

6 = ORNAMENTAL

2. REGION WHERE BEST ADAPTED IN THE U.S.A.:

1 = NORTHWEST

2 = NORTHCENTRAL

3 = NORTHEAST

4 = SOUTHEAST

5 = SOUTHCENTRAL

6 = SOUTHWEST

7 = MOST REGIONS

3. MATURITY (In Region of Best Adaptability):

DAYS FROM EMERGENCE TO 50% OF PLANTS IN SILK

DAYS FROM 50% SILK TO OPTIMUM EDIBLE QUALITY

DAYS FROM 50% SILK TO HARVEST AT 25% KERNEL MOISTURE

(Under "comments" (pg. 3) state how
heat units were calculated)

HEAT UNITS

HEAT UNITS

HEAT UNITS

4. PLANT:

CM. HEIGHT (To tassel tip)

CM. EAR HEIGHT (To base of top ear)

CM. LENGTH OF TOP EAR INTERNODE

(estimated)

Number of Tillers:

1 = NONE

2 = 1-2

3 = 2-3

4 = > 3

Number of Ears Per Stalk:

1 = SINGLE

2 = SLIGHT TWO-EAR TENDENCY

3 = STRONG TWO-EAR TENDENCY 4 = THREE-EAR TENDENCY

Cytoplasm Type:

1 = NORMAL

2 = "T"

3 = "S"

4 = "C"

5 = OTHER (Specify)

5. LEAF (Field Corn Inbred Examples Given):

Color:

1 = LIGHT GREEN (HY)

2 = MEDIUM GREEN (WF9)

3 = DARK GREEN (B14)

4 = VERY DARK GREEN (K16)

Angle from Stalk (Upper half):

1 = < 30°

2 = 30-60°

3 = > 60°

Sheath Pubescence:

1 = LIGHT (W22)

2 = MEDIUM (WF9)

3 = HEAVY (OH26)

Marginal Waves:

1 = NONE (HY)

2 = FEW (WF9)

3 = MANY (OH7L)

Longitudinal Creases:

1 = ABSENT (OH51)

2 = FEW (OH56A)

3 = MANY (PA11)

Width:

CM. WIDEST POINT OF EAR NODE LEAF

Length:

CM. EAR NODE LEAF

NUMBER OF LEAVES PER MATURE PLANT

6. TASSEL:

07

NUMBER OF LATERAL BRANCHES

441
9200038

Branch Angle from Central Spike:

1

1 = < 30°

2 = 30-40°

3 = > 45°

Penduncle Length:

12

CM. FROM TOP LEAF TO BASAL BRANCHES

Pollen Shed:

2

1 = LIGHT (WF9)

2 = MEDIUM

3 = HEAVY (KY21)

6

Anther Color:

1 = YELLOW

2 = PINK

3 = RED

4 = PURPLE

5 = GREEN

6

Glume Color:

6 = OTHER (Specify)

Brown with purplish tint
Green with red ring at base and purplish venation

Pollen Restoration for Cytoplasm (0 = Not Tested, 1 = Partial, 2 = Good)

0

"T"

0

"S"

0

"C"

0

OTHER (Specify Cytoplasm and degrees of restoration)

7. EAR (Husked Ear Data Except When Stated Otherwise):

16

CM LENGTH

39

MM. MID-POINT
DIAMETER

127

GM. WEIGHT

Kernel Rows:

1

* somewhat but not entirely distinct

1 = INDISTINCT

2 = DISTINCT

16

NUMBER

2

1 = STRAIGHT

2 = SLIGHTLY CURVED

3 = SPIRAL

Silk Color (Exposed at Silking Stage):

4

1 = GREEN

2 = PINK

3 = SALMON

4 = RED

Husk Color:

1

FRESH

1 = LIGHT GREEN

2 = DARK GREEN

3 = PINK

6

DRY

4 = RED

5 = PURPLE

6 = BUFF

Husk Extension: (Harvest Stage)

2

1 = SHORT (Ears Exposed) 2 = MEDIUM (Barely Covering Ear)
3 = LONG (8-10CM Beyond Ear Tip)
4 = VERY LONG (> 10 CM)

Husk Leaf:

2

1 = SHORT (< 8 CM) 2 = MEDIUM (8-15 CM)
3 = LONG (> 15 CM)

Shank:

09

CM LONG

7

NO. OF INTERNODES

Position at Dry Husk Stage:

2

1 = UPRIGHT

2 = HORIZONTAL

3 = PENDENT

Taper:

2

1 = SLIGHT

2 = AVERAGE

3 = EXTREME

Drying Time (Unhusked Ear):

2

1 = SLOW

2 = AVERAGE

3 = FAST

8. KERNEL (Dried):

Size (From Ear Mid-Point):

10

MM LONG

06

MM. WIDE

04

MM. THICK

Shape Grade (% Rounds)

3

1 = < 20

2 = 20-40

3 = 40-60

4 = 60-80

5 = > 80

8. KERNEL (Dried):

9200038

44

☐ 1

Pericarp Color:

1 = COLORLESS

2 = RED-WHITE CROWN

3 = TAN

4 = BRONZE

5 = BROWN

6 = LIGHT RED

7 = CHERRY RED

8 = VARIEGATED (Describe) _____

☐ 1

Aleurone Color:

1 = HOMOZYGOUS

2 = SEGREGATING (Describe) _____

☐ 5

1 = WHITE

2 = PINK

3 = TAN

4 = BROWN

5 = BRONZE

6 = RED

7 = PURPLE

8 = PALE PURPLE

9 = VARIEGATED (Describe) _____

☒ 3

Endosperm Color:

1 = WHITE

2 = PALE YELLOW

3 = YELLOW

4 = PINK-ORANGE

5 = WHITE CAP.

Endosperm Type:

☐ 3

1 = SWEET (su1)

2 = EXTRA SWEET (sh2)

3 = NORMAL STARCH

4 = HIGH AMYLOSE STARCH

5 = WAXY STARCH

6 = HIGH PROTEIN

7 = HIGH LYSINE

8 = OTHER (Specify) _____

☐ 2☐ 5

GM. WEIGHT /100 SEEDS (Unsize Sample)

9. COB:

☐ 3☐ 1

MM. DIAMETER AT MID-POINT

Strength:

☐ 2

1 = WEAK

2 = STRONG

Color:

☐ 3

1 = WHITE

2 = PINK

3 = RED

4 = BROWN

5 = VARIEGATED

6 OTHER (Specify) _____

10. DISEASE RESISTANCE (0 = Not Tested, 1 = Susceptible, 2 = Resistant):

intermediate resistance to Gray Leaf Sppt.
Common Rust, and Goss. Wilt☐ 0

STALK ROT (Diplodia)

☐ 0

STALK ROT (Fusarium)

☐ 0

STALK ROT (Gibberella)

☒ 2intermediate
NORTHERN LEAF BLIGHT☐ 1

SOUTHERN LEAF BLIGHT

☒ 2intermediate
SMUT (Common)☒ 0

SOUTHERN RUST

☒ 0

CORN SMUT (Head)

☒ 2intermediate
BACTERIAL WILT☐ 0

BACTERIAL LEAF BLIGHT

☐ 2Strain A
MAIZE DWARF MOSAIC☐ 0

STUNT

☐ 1

OTHER (Specify)

Anthracnose Leaf Blight, Maize Dwarf Mosaic (Strain B)

11. INSECT RESISTANCE (0 = Not Tested, 1 = Susceptible, 2 = Resistant):

☒ 1intermediate to
both broods
CORNBORER☐ 0

EARWORM

☐ 0

SAPBEETLE

☐ 1

APHID

☐ 0

ROOTWORM (Northern)

☐ 0

ROOTWORM (Western)

☐ 0

ROOTWORM (Southern)

☐

OTHER (Specify) _____

12. VARIETIES MOST CLOSELY RESEMBLING THAT SUBMITTED FOR THE CHARACTERS GIVEN:

CHARACTER	VARIETY	CHARACTER	VARIETY
Maturity	B73	Kernel Type	B73
Plant Type	B73	Quality (Edible)	-
Ear Type	B73	Usage	B73

REFERENCES:

U.S. Department Agriculture. Yearbook 1937.

Corn: Culture, Processing, Products. 1970 Avi Publishing Company, Westport, Connecticut. (Numerous Authors)

Emerson, R.A., G.W. Beadle, and A.C. Fraser. A Summary of Linkage Studies in Maize. Cornell A.E.S., Mem. 180. 1935.

The Mutants of Maize. 1968. Crop Science Society of America. Madison, Wisconsin.

Stringfield, G.H. Maize Inbred Lines of Ohio. Ohio A.E.S. Bul. 831. 1959.

Butler, D.R. 1954 - A System for the Classification of Corn Inbred Lines - PhD. Thesis, Ohio State University.

COMMENTS:

9

EXHIBIT D**ADDITIONAL DESCRIPTION OF ICI 441**

5MS
8/21/92

As an inbred per se, ICI 441 is similar to the public inbred line B73. Inbred ICI 441 reaches 50 percent pollen shed and 50 percent silk at 1573 and 1604 heat units after planting respectively. Inbred ICI 441 makes hybrids with an average Minnesota relative maturity of 118 days. Adaptation is best in the central corn belt of the United States. *(Some of these measurements were taken outside the area of best adaptability.)*

In hybrid combination ICI 441 contributes very high yield for maturity and improved drydown capability as compared to B73. Hybrids containing ICI 441 tend to have longer, more slender ears than B73 hybrids. Cob diameter is quite small, and cob integrity is excellent. Standability (stalks) is above average, although root quality is a bit below average. Seed germination ability is average, and seedlings tend to have a purple appearance (more pronounced than other B73's) under cool early season growing conditions. Other important agronomic traits are average to above average.

Inbred ICI 441 has shown moderate resistance to first and second generation European Corn Borer, Northern Corn Leaf Blight (*Exserohilum turcicum*), Grey Leaf Spot (*Cercospora zeae*), Common Rust (*Puccinia sorghi*), Goss's Wilt (*Corynebacterium nebraskense*) and Stewart's Wilt (*Erwinia stewartii*). Inbred ICI 441 shows excellent resistance to Maize Dwarf Mosaic Virus (Strain A), and Common Smut (*Ustilago maydis*). Resistance to Southern Corn Leaf Blight (*Bipolaris maydis*), Anthracnose Leaf Blight (*Colletotrichum graminicola*) and Maize Dwarf Mosaic Virus (Strain B) is poor.

The one distinguishing characteristic for inbred ICI 441 per se (as compared to many other B73 types) is the seedling purpling observed under cool, wet early season conditions (average daily temperatures below 60 degrees fahrenheit). In hybrids, ICI 441 distinguishes itself though the small, hard cob, and long slender ear traits it contributes to a cross.



EXHIBIT E**STATEMENT OF THE BASIS FOR APPLICANT'S OWNERSHIP**

ICI Seeds Inc. based in Coon Rapids, Iowa is the employer of plant breeders involved in the selection and development of inbred ICI 441. Thus, ICI Seeds Inc. has the sole rights and ownership of inbred ICI 441.

PVP-REP1
11/4/91

Revised:

EXHIBIT E (CERTIFICATE #9200038)

STATEMENT OF THE BASIS FOR APPLICANT'S OWNERSHIP

ZENECA Ltd. is the employer of plant breeders involved in the selection and development of inbred ICI 441. Thus, ZENECA Ltd. has the sole rights and ownership of inbred ICI 441.

PVP-REP1
11/4/91

9200038

CUSHMAN DARBY & CUSHMAN, L.L.P.

Attorneys at Law
Since 1892

August 14, 1996

ARLON V. CUSHMAN (1892-1950)
JOHN J. DARBY (1920-1950)
WILLIAM M. CUSHMAN (1925-1964)

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CARL G. LOVE
EDGAR H. MARTIN
WILLIAM K. WEST, JR.
KEVIN E. JOYCE
EDWARD M. PRINCE
DAVID W. BRINKMAN
GEORGE M. SIRILLA
DONALD J. BIRD
W. WARREN TALTAVULL
SUSAN T. BROWN
PETER W. GOWDEY
DALE S. LAZAR
GLENN J. PERRY
KENDREW H. COLTON
CHRIS COMUNTZIS
RICHARD. L. KIRKPATRICK
LAWRENCE HARBIN
PAUL E. WHITE, JR.
SHELDON H. KLEIN
MICHELLE N. LESTER
JEFFREY A. SIMENAUER
ROBERT A. MOLAN
G. PAUL EDGELL
RAYMOND L. SWEIGART
DAVID A. JAKOPIN
MARK G. PAULSON *
LYNN E. ECCLESTON
JAMES D. BERQUIST
TIMOTHY J. KLIMA
JOHN P. MORAN
S.C. GLAZIER, P.C.

WILLIAM P. ATKINS
JACK S. BARUFKA
BRIAN J. BEATUS
WILLIAM H. BOLLMAN
GREGORY P. BRUMMETT
MARLANA K. CHAPIN
MARK J. DANIELSON *
MICHAEL R. DZWONCZYK
BARRY P. GOLOB
JOHN C. GORECKI *
MICHAEL W. HAAS
ADAM R. HESS
ANN S. HOBBS, PH.D.
RICHARD IRVING *
PAUL W. KRUSE *
KURT W. LOCKWOOD *
TIMOTHY F. LOOMIS *
JEFFREY S. MELCHER
ANTHONY L. MIELE *
CHRISTOPHER P. MURPHY
B.J. SADOFF *
EDWARD J. STEMBERGER
DAVID S. TAYLOR
RICHARD WYDEVEN

COUNSEL

HOWARD D. DOESCHER
LAWRENCE A. HYMO
ALLEN KIRKPATRICK
THOMAS G. WISEMAN *

* ADMITTED IN JURISDICTIONS
OTHER THAN D.C.

Ms. Stanton
United States Plant Variety
Protection Office
NAL Building, Room 500
1031 Baltimore Boulevard
Beltsville, Maryland 20705-2351

RE: Assignment of PVP Certificates
Our Ref: PNK:70596/220265

Dear Ms. Stanton:

Herewith assignment letter for the listed PVP
certificates dated July 22, 1996.

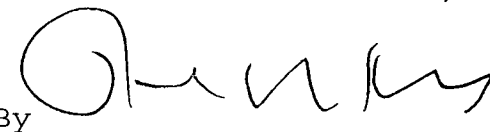
The assignment transfers ownership of the specified
PVP certificates from Zeneca Limited to Zenco (No. 4)
Limited. Our check for the required fee (\$25.00 per
certificate) made payable to the "U.S. Treasury" is also
attached.

Acknowledgement of the receipt of this assignment is
requested.

If there are any questions or if we need to do
anything else, please advise.

Respectfully submitted,

CUSHMAN DARBY & CUSHMAN, L.L.P.

By 
Paul N. Kokulis
Reg. No. 16773

PNK:mh
Attachment
Phone: (202) 861-3503

ZENECA

7200038
ZENECA Agrochemicals

Jealott's Hill Research Station
Bracknell
Berkshire RG42 6ET
UK

Telephone (01344) 424701
Telex 847556
Fax (01344) 55629

Plant Variety Protection Office
NAL Building, Room 500
1031 Baltimore Blvd
Beltsville, MD 20705-2351
USA

FOR THE ATTENTION OF MARSHA A STANTON

Your Ref	Our Ref	Direct Line	Direct Fax	Tel ext	Date
		01344 414339	01344 481112	4339	22 July 1996

Dear Ms Stanton

ASSIGNMENT OF PVP CERTIFICATES

ZENECA LIMITED of 15 Stanhope Gate, London W1Y 6LN, England, a company created and existing under the laws of England, is the owner of the following PVP Certificates now registered in the United States Plant Variety Protection Office:

Field Corn Application Numbers

9200037, 'ICI193'
9200038, 'ICI441'
9200039, 'ICI740'
9200041, 'ICI986'
~~9300048, 'ICI530'~~
9300304, 'ZS365'
9300305, 'ZS635'
9400261, 'ZS0114'
~~9400259, 'ZS0853'~~
9400260, 'ZS1513'
9500295, 'ZS1022'
9500296, 'ZS0541'
9500297, 'ZS1202'
~~9500398, 'ZS1284'~~
9500299, 'ZS1791'
9500300, 'ZS1679'
9500301, 'ZS1783'

WRMS

WRMS

9500298

ZENECA Agrochemicals in the UK is
part of ZENECA Limited
Registered in England No 2710846
Registered Office
ZENECA Limited
15 Stanhope Gate London W1Y 6LN

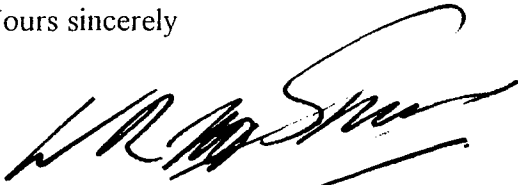
7200038

22 Jul 96

WHEREAS ZENCO (NO.4) LIMITED of 15 Stanhope Gate, London W1Y 6LN, a company created and existing under the laws of England, is desirous of acquiring said registered PVP Certificates.

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration Zeneca Limited hereby assigns to Zenco (No.4) Limited all right, title and interest in the United States in and to said PVP Certificates.

Yours sincerely

A handwritten signature in black ink, appearing to read 'W R McA Spence', written in a cursive style.

W R McA Spence
Authorised Signatory



CERTIFICATE OF INCORPORATION ON CHANGE OF NAME

Company No. 2908082

The Registrar of Companies for England and Wales hereby certifies that
ZENCO (NO. 4) LIMITED

having by special resolution changed its name, is now incorporated
under the name of
ADVANTA TECHNOLOGY LIMITED

Given at Companies House, Cardiff, the 14th April 1999



THE OFFICIAL SEAL OF THE
REGISTRAR OF COMPANIES



C O M P A N I E S H O U S E